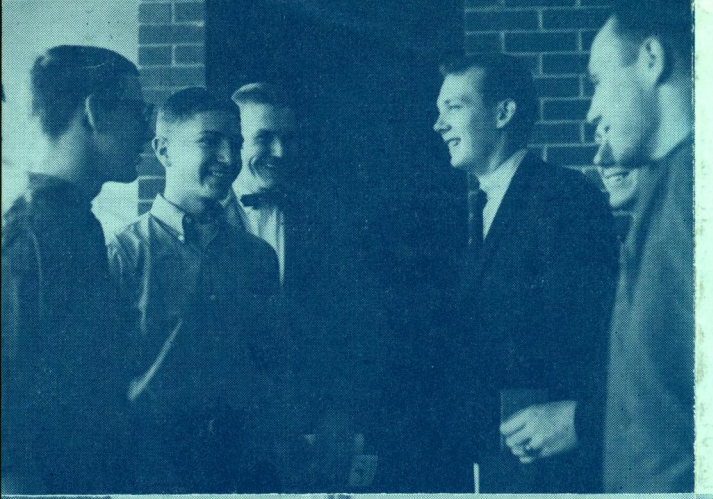
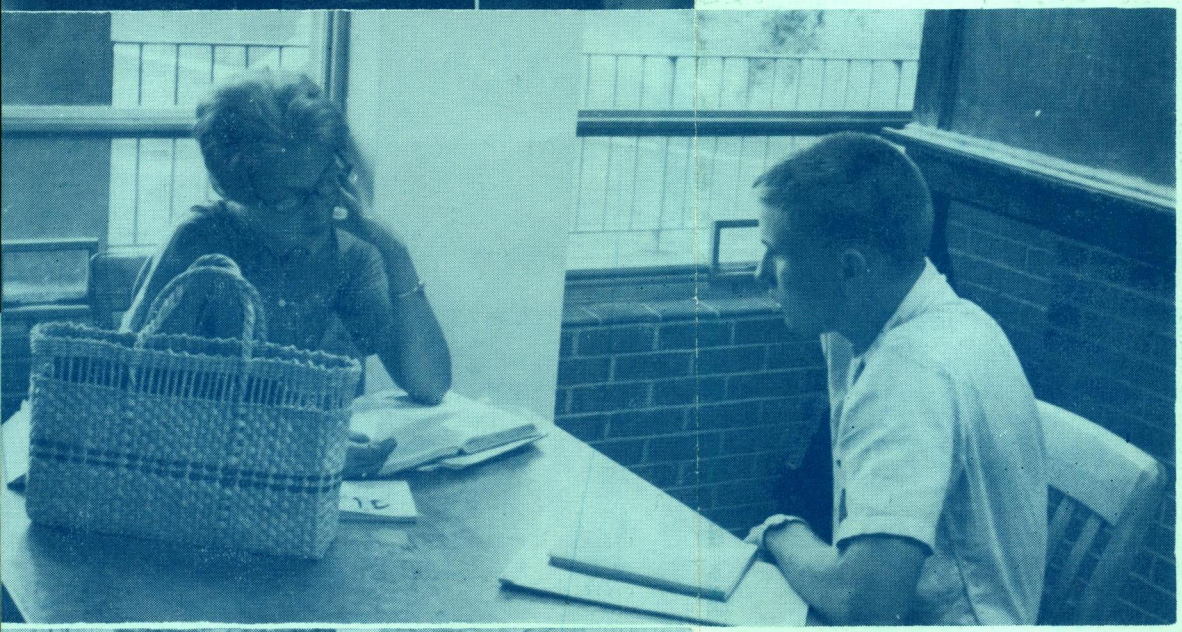
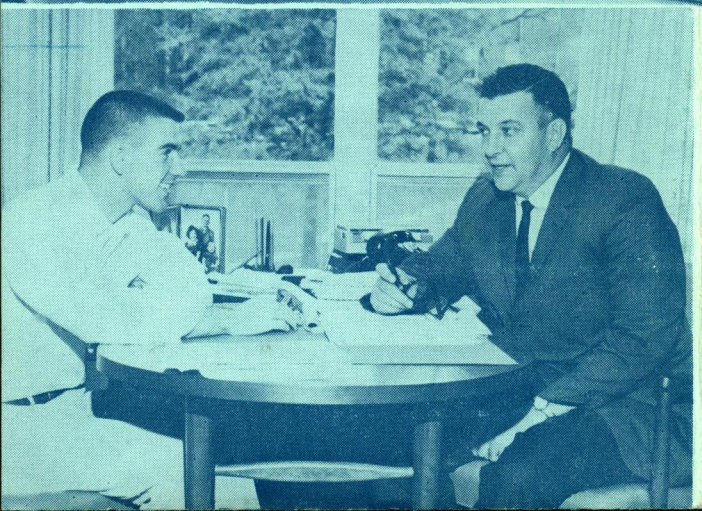






MILLSAPS COLLEGE BULLETIN

SUMMER SESSION 1964

FIRST TERM JUNE 6 - JULY 11

SECOND TERM JULY 13 - AUGUST 15

Entered as second class matter November 21, 1917 at the Post Office at Jackson, Miss., under the Act of Congress of August 24, 1912.

MILLSAPS COLLEGE BULLETIN

VOLUME 48 FEBRUARY, 1964 NUMBER 6

Published Monthly During The College Year By MILLSAPS COLLEGE IN JACKSON, MISS.

MILLSAPS COLLEGE SUMMER SESSION

1964

First Term

June 6 ---------- Registration

June 8 ---------- Classes Begin

July 4 ---------- Holiday

July 11 ---------- Final Examinations

Second Term

July 13 -- Registration of New Students, Classes Begin

August 15 ---------- Final Examinations

REGISTRATION

Application blanks may be obtained by writing to: Director of Summer Session, Millsaps College, Jackson, Mississippi, 39210. Pre-registration is advisable.

High School graduates attending college for the first time must supply a complete transcript.

College students entering Millsaps for the summer terms only must provide a statement of eligibility from the dean or registrar of last school attended.

To transfer credit earned during summer terms, a written request must be filed with the Registrar of Millsaps College.

SCHEDULE CHANGES

All courses listed will be offered, but the College reserves the right to withdraw a course if there is insufficient registration (less than 5) or to change instructors if necessary.

HOUSING REGULATIONS

Adequate college housing is available for both men and women. All out-of-town students must live on campus unless they have written permission from the Office of Student Personnel to live off-campus. No first semester freshmen are permitted to live in fraternity houses.

MAXIMUM LOAD

The maximum load a student may take is seven semester hours in one term, fouteen semester hours in two terms.

ATTENDANCE

Students are expected to be present for each class session. Instructors may exclude students from a class and withhold credit if unexcused absences in that class exceed three.

EXPENSES

Tuition per term:

Five semester hours or less, each hour ___$ 20.00

Six or seven semester hours _____$120.00

Laboratory fees, per term:

Biology (except 311) _____$10.00

Chemistry _____$10.00

Economics 281, 282, 272 _____$ 6.00

Geology _____$10.00

Modern Languages _____$ 5.00

Physical Education 201, 202, 221, 222 ___$ 2.00

Physics _____$10.00

Dormitory fees, per term

Room _____$20.00

Board, per term:

3 meals daily _____$50.00

(Students who prefer to pay cash for each meal, instead of using board plan, may do so.)

Summary of Expenses:

	1 5-week term	2 5-week terms
Day Students (tuition only) ____	$120.00	$240.00
Dormitory Students, without board _____	$140.00	$280.00
Dormitory Students, with board _____	$190.00	$380.00

Note: During the summer session no scholarships are available, and no reductions in tuition are made.

MUSIC COURSES

Summer Session music courses in voice may be arranged through Mr. Richard Alderson and Mr. Joseph T. Rawlins; in piano and organ through Mr. Donald Kilmer.

SCHEDULE OF CLASSES

7:30-9:00 Course	Term Hrs. 1st Sem.		Term Hrs. 2nd Sem.		Description	Room	Instructor
Biology	211	4 (ten weeks)			Comparative Anatomy	SH-215	Staff
Chemistry	252	4	362	4	Quantitative Analysis — Pre-Med Physical	SH-132	Berry-Mansfield
Economics	201	3	202	3	Economic Principles and Problems	M-304	Latham
Education	303	3	401	1-3	Language Arts in Elem. School — Special Problems	M-302	Meaders
*English	101	3	102	3	Composition	SH-011	Morehead
English	301	3	391	3	American Literature — Journalism	M-303	Goodman-Sanders
*French	101	3	102	3	Elementary French	M-22	Horan
*Geology	101	3	102	3	Physical Geology — Historical Geology	SH-056	Johnson
History	305	3	306	3	South to the Civil War — South after the Civil War	M-301	Harris
			308	3	Mississippi and Its Relation to the South	M-301	Harris
**Latin	201	3	202	3	Intermediate Latin	M-113	Coullet
*Mathematics	103	3	104	3	Foundations of Mathematics	SH-013	McKenzie
*Mathematics	111	3	112	3	College Algebra — Trigonometry	SH-015	Knox
Philosophy	301	3	302	3	History of Philosophy	CC-24	Bergmark
*Physical Edu.	201	1	202	1	Golf	Gym	Montgomery-Thornton
*Physical Edu.	221	1	222	1	Tennis	Gym	Montgomery-Thornton
Physical Edu.	332	3	332	3	Hygiene	F-012	Edge
Psychology	315	3	202	3	Tests and Measurements—Introduction to Psychology	SH-032	Levanway
*Religion	201	3	202	3	Old Testament — New Testament	CC-21	Wroten-Anding
*Spanish	101	3	102	3	Elementary Spanish	M-21	Bufkin
*Speech			101	3	Fundamentals: Public Speaking	CC-25	Collins
9:05-10:35							
*Biology	101	3	102	3	General Biology	SH-213	Staff
*Biology	121	4	122	4	General Zoology	SH-226	Staff
*Chemistry	111	4	112	4	General Chemistry	SH-153	Staff
Chemistry	331	4	332	4	Organic Chemistry	SH-132	Staff
Economics	351	3			Marketing	SH-032	Nicholas
*Economics			102	3	Economic Geography	SH-056	Johnson
*Economics	283		284		Accounting Lab. (M., Tu., Th., F.)	M-305	Beacham
Economics	322	3	336	3	Public Finance — Business Cycles	M-304	Latham
Education	211	3	321	3	Modern Mathematics in the Elementary School — Social Studies in the Elementary School	M-302	Meaders
Education	362	3	372	3	High School Methods — Principles of Secondary Education	Lib. Forum	R. E. Moore
*English	101	3	102	3	Composition	SH-015	Mrs. Blackwell
English	201	3	202	3	English Literature	M-303	Boyd - Goodman
**German	201	3	202	3	Intermediate German	M-22	Guest - Lowe
*History	101	3	102	3	Western Civilization	M-301	Park
History	321	3	322	3	Problems in Modern History	Lib. 301	R. H. Moore
*Latin	101	3	102	3	Elementary Latin	Lib. 302	Coullet
Mathematics	213	3	214	3	Plane Analytic Geometry — Solid Analytic Geometry	SH-011	McKenzie
*Engineering	103	2	104	2	Engineering Drafting	SH-0016	Ritchie
Philosophy	201	3	311	3	Introduction to Philosophy — Ethics	CC-24	Scott
*Physical Edu.	201	1	202	1	Golf	Gym	Edge
*Physical Edu.	221	1	222	1	Tennis	Gym	Edge
Physics	101	3	102	3	General Physics (M., Tu., Th., F.)	SH-115	Galloway
Physics	131	4	132	4	General Physics	SH-115	Galloway
Political Sci.	*111	3	242	3	American Government — Comparative Government	SH-013	Bowen
*Sociology	101	3	101	3	Introduction to Sociology	F-01	Bryant
*Speech	101	3	102	3	Fundamentals: Public Speaking — Oral Reading	CC-25	Collins - Goss
10:40-12:10							
Biology	381	4 (ten weeks)			Elementary Bacteriology	SH-212	Staff
*Economics	281	3	282	3	Introduction to Accounting	M-305	Beacham
Economics	*101	3	342	3	Introduction to Business — Principles of Insurance	M-304	Nicholas
Education	331	3			Music for Children	Music Hall	Mrs. Byler
Education	204	3	352	3	Human Growth and Deveolpment — Educational Psychology	Lib. Forum	R. E. Moore
*English	101	3	102	3	Composition	SH-011	Mrs. Blackwell
English	201	3	202	3	English Literature	M-303	Morehead
English	361	3	302	3	Chaucer — American Literature	M-113	Boyd - Goodman
**French	201	3	202	3	Intermediate French	M-21	Horan
*German	101	3	102	3	Elementary German	M-302	Guest - Lowe
*History	201	3	202	3	History of the U. S.	M-301	R. H. Moore
Mathematics	313	3	314	3	Calculus Is — Calculus IIs	SH-015	Knox
Mathematics	351	3	325	3	Differential Equations — Calculus III	SH-013	Ritchie
Philosophy	331	3	202	3	Philosophy of Religion — Logic	CC-24	Bergmark - Scott
*Physical Edu.	201	1	202	1	Golf	Gym	Montgomery - Thornton
*Physical Edu.	221	1	222	1	Tennis	Gym	Montgomery - Thornton
*Physics	151	1	152	1	Laboratory to be arranged	SH-112	Galloway
*Physics	351	1	351	1	Photography — To be arranged	SH-116	Galloway
Psychology	272	3	302	3	Statistics — Dynamics of Human Behavior	SH-032	Levanway
*Religion	201	3	202	3	Old Testament — New Testament	CC-25	Wroten - Anding
**Spanish	201	3	202	3	Intermediate Spanish	M-22	Bufkin
Political Sci.	361	3	362	3	International Relations	SH-115	Bowen
Sociology	*201	3	301	3	Introduction to Anthropology — Marriage and the Family	F-01	Bryant
Speech	301	3	302	3	Interpretation of Drama	Lib. 301	Goss
Speech	361	3	221	3	Phonetics — Persuasion	Lib. 302	Collins

LABORATORY SESSIONS, WHERE REQUIRED, WILL BE ARRANGED AT THE FIRST MEETING OF THE CLASS.

Gulf Coast Research Laboratory courses recognized for full credit.

*Courses open to freshmen.

**Intermediate courses in foreign languages open to freshmen who have had two years of the same language.

A COLLEGE PREVIEW

You should consider the following when investigating a college:

- What kind of curriculum does it offer?
- What are the requirements for entrance?
- Do you want specialized or liberal training?
- Do you want a big school or a small school atmosphere?
- Will the faculty be able to inspire you to do your best?

Millsaps College invites you to make a careful study of its facilities, its program, its curriculum, its faculty, its student body, its policy on

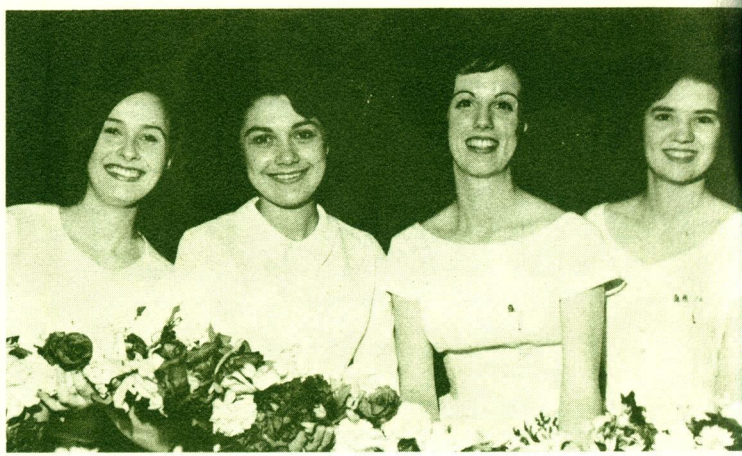
HIGH SCHOOL DAY
November 21, 1964
MILLSAPS COLLEGE
Jackson, Mississippi

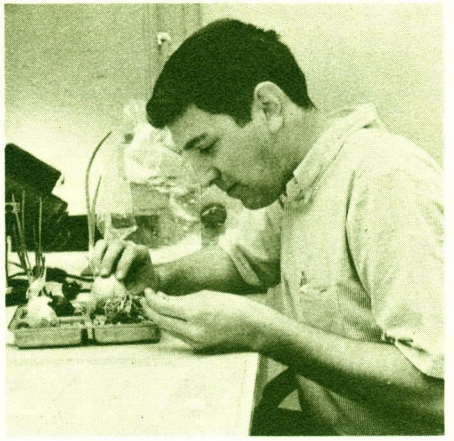
Know The Colleges You Are Considering

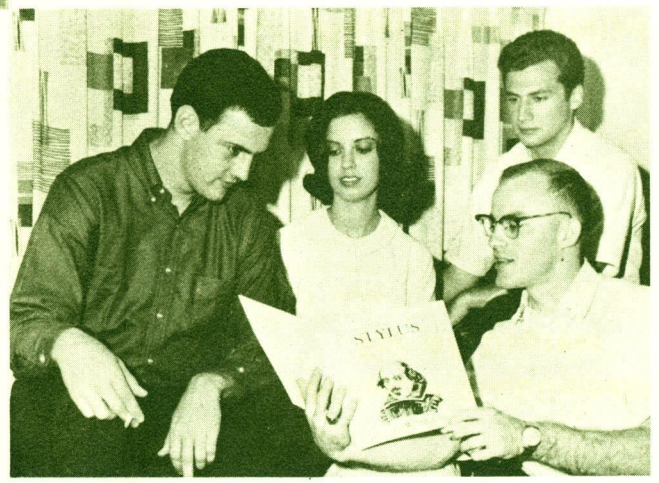
Millsaps College Bulletin

VOLUME 49 NOVEMBER, 1964 NUMBER 3

Published monthly during the college year by Millsaps College, Jackson, Miss. Entered as second class matter November 21, 1916, at the Post Office at Jackson, Miss., under the Act of Congress of August 24, 1912.







Scholarship Awards

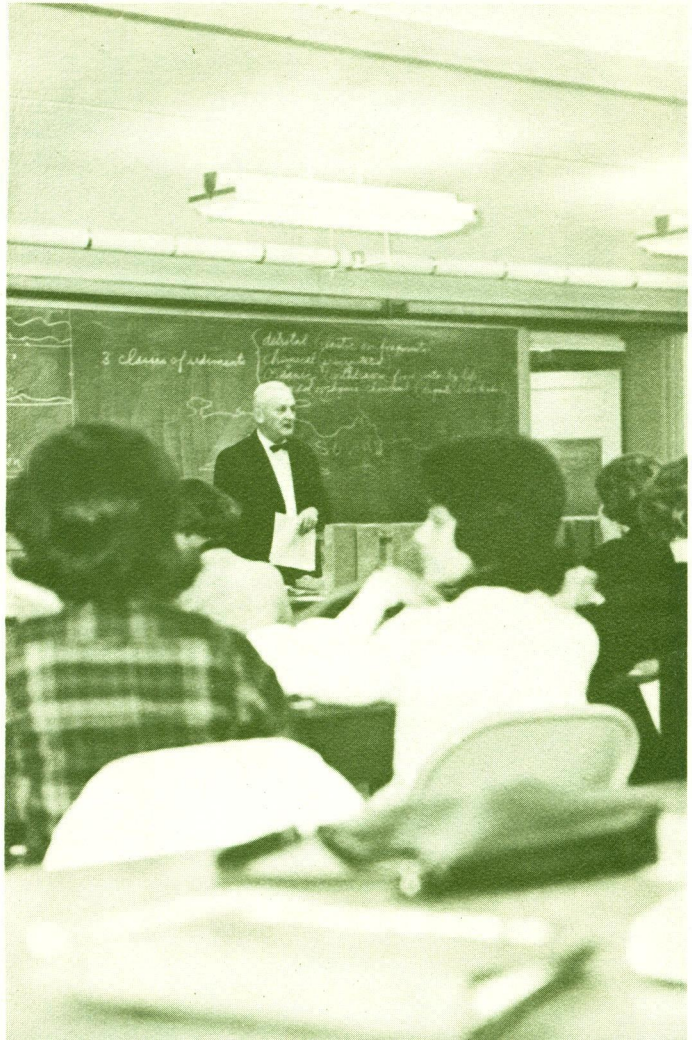
Competitive scholarship tests on High School Day, November 21 —

Forty scholarships totaling $4,800

- Two $300 awards
- Two $200 awards
- Four $150 awards
- Twenty-two $100 scholarships to seniors from high schools outside the city of Jackson
- Ten $100 scholarships to seniors from high schools within the city of Jackson.

Additional special scholarships to qualified students.

For detailed information about other scholarships, write Mr. J. L. Woodward, Chairman of the Awards Committee, Millsaps College, Jackson, Mississippi.



Schedule of Activities
High School Day
November 21, 1964
Millsaps College

Highlights

8:00 a.m.	Registration
	Reception
	Refreshments
9:00 a.m.	Entertainment and Convocation
9:45 a.m. - 11:15 a.m.	Scholarship Tests (Optional)
9:45 a.m. - 1:15 p.m.	Guided Tours
11:30 a.m. - 12:45 p.m.	Lunch
12:30 p.m. - 2:00 p.m.	Conferences with Faculty and Staff
2:00 p.m. - 3:15 p.m.	Variety Show
3:30 p.m.	Visits to Houses of Social Groups
5:00 p.m.	"Dutch Supper"
8:15 p.m.	All-Campus Party

Profile

Millsaps College, a private liberal arts institution supported by the Methodist Church, was founded in 1890. It is named in honor of its chief benefactor, Major R. W. Millsaps.

Offering the Bachelor of Arts and Bachelor of Science degrees in twenty different areas of specialization, Millsaps is fully accredited by all appropriate standardizing and accrediting agencies, both regional and national.

Enrollment is limited to 950 students to preserve the College's reputation for academic excellence, which it has had from its beginning. It emphasizes a close student-faculty relationship, believing that ideas shared in an informal atmosphere are as profitable and conducive to learning as those gained in the classroom and that the personality of the teacher is often an influential factor in molding the student's life.

Located in the state capital, a city of 150,000, Millsaps covers one hundred acres on one of the highest points in the city. The city of Jackson offers advantages in terms of cultural, educational, religious, and recreational experiences. The Capitol is a laboratory for students of political science and government. The University of Mississippi Medical Center is within sight of the Millsaps campus.

On the extracurricular side, Millsaps has eight social groups, fifteen honor societies which recognize contributions to various phases of college life, a weekly newspaper, a yearbook, a literary magazine, an active drama organization, four choral groups, a non-subsidized athletic program, and other organized activities designed to meet the needs of students whose outlook and experience can be broadened by participation in groups of students with similar interests.

Requirements for Admission

Requirements for admission to freshman standing include the following:

All applicants for admission must furnish evidence of good moral character, sound physical and mental health, adequate scholastic preparation, and intellectual maturity.

High school requirements include sixteen acceptable units of secondary school work and graduation. One-half of the units must be in English, mathematics, and social studies or foreign language. Not more than four vocational units may be included among those required for entrance.

A prospective student should apply for admission well in advance of the date on which he wishes to enter, particularly if housing accommodations on the campus are desired.

To apply for admission a prospective student should follow the procedure described below:

1. He should request an application blank from the Director of Admissions.

2. He should fill out the application and return it to the Director of Admissions with the $10.00 application fee.

3. He should have forwarded to the Committee the admission reference forms which are supplied with the application blank.

4. He should have his high school principal or college registrar send an official transcript of his credits directly to the Director of Admissions.

5. Applicants must submit results of the American College Testing program to the Admissions Committee.

Minimum Requirements For All Degrees

English, 12 hours
Foreign Language, 12 hours
History, 6 hours
Religion, 6 hours
Mathematics, 6 hours
Physical Education, 2 hours
Comprehensive Examination in Major Subject
English Proficiency Examination

Major Fields Offered

Ancient Languages
Biology
Chemistry
Economics and Business Administration
Elementary Education
English
French
Geology
German
History
Mathematics
Music
Philosophy
Physics and Astronomy
Political Science
Psychology
Religion
Sociology
Spanish

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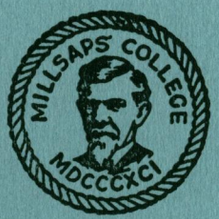
1964

MILLSAPS COLLEGE BULLETIN



Vol. XLIX DECEMBER, 1964 No. 4

Published by Millsaps College, Jackson, Mississippi, monthly during the regular session. Entered as Second Class Matter, November 21, 1917, at the Post Office at Jackson, Mississippi, under the Act of August 24, 1912.

FACULTY ADDRESSES

Chapel Series 1963-64

THE PROPER STUDY OF MANKIND IS MAN

(Two of a series of four)

- **The Biggest Enigma in Captivity**
  By Clifton Bryant
- **The Coming of Age of the Behavioral Sciences**
  By Russell Levanway

December, 1964

The Biggest Enigma In Captivity

By Clifton Bryant
Chairman, Department of Sociology

I wanted to talk today about a mystery, a riddle, a puzzle, if you will, an enigma. I have therefore chosen to speak about man, because he is, in fact, a mystery, a riddle, an enigma. He is perhaps the greatest enigma of them all, the biggest enigma in captivity.

Of all the questions which man has pondered in his long history, the most perplexing is "What is man?" No completely satisfactory answer to this riddle has ever been advanced. Man remains as he has been for eons of time, an enigma, for the most part. This is not to say that attempts to answer this question have not been made. Indeed, few problems have consumed as much of man's energies as have his attempts to understand himself.

Man is an animal, but he is more than an animal. Man is a human being. He is a tool-making and tool-using animal. He is an animal that has a past and future, as well as a present, and is aware of his past and future. Man is an animal that can develop systems of abstract symbols and can manipulate these symbol systems.

Some say that man is the only moral animal. If this is so then he is also the only immoral animal. Only man among the animals wages war, or buries his dead, develops an arbitrary division of labor, or has any notion of a hereafter or supreme power. Only man develops a culture. Only man can manufacture an environment and then be molded and influenced by that environment. Man is an enigma to himself and to his fellowman. Man is the only enigma that manufacturers other enigmas, for if we do not understand man, neither do we understand all that man has produced.

Man, the enigma that he is, without doubt is a challenge worthy of the efforts necessary to understand him.

To quote Shakespeare:

> What a piece of work is a man! How noble in reason! How infinite in faculty! in form, in moving, how express and admirable! in action how like an angel! in apprehension how like a god! the beauty of the world! the paragon of animals!

Where, then, do we begin the study of man? Which end of the thread do we seek in order to unravel the mystery? Where lies the key to the lock? What is the proper study of mankind? Alexander Pope gives us something of an answer:

> Know then thyself, presume not God to scan,
> The proper study of mankind is man.
> Placed on this isthmus of a middle state,
> A being darkly wise, and rudely great:
> With too much knowledge for the sceptic side,
> With too much weakness for the stoic's pride,
> He hangs between; in doubt to act or rest;
> In doubt to deem himself a god, or beast;
> In doubt his mind or body to prefer;
> Born but to die, and reas'ning but to err:
> Alike in ignorance, his reason such,
> Whether he thinks too little or too much;
> Chaos of thought and passion, all confused;
> Still by himself abused, or disabused;
> Created half to rise, and half to fall;
> Great lord of all things, yet a prey to all;
> Sole judge of truth, in endless error hurled;
> The glory, jest, and riddle of the world!

The proper study of mankind is man. But even armed with this insight, where do we begin to study man? Do we study man in the past, man in the present, or the future of man? Perhaps man and his world change too rapidly for understanding. Perhaps, like the caucus race which Lewis Carroll tells us about in **Alice's Adventures in Wonderland,** there is no beginning and no end.

Has man changed or does man remain the same? Consider the following quotation by an eminent educator and scholar commenting on young people:

> The children now love luxury; they have bad manners, contempt for authority, they show disrespect for their superiors. They contradict their parents, chatter before company and tyrannize their elders.

The eminent scholar and educator who made that statement was Socrates, and the time was 2,400 years ago.

Or reflect on the following news item from a local newspaper. The item related that a box which had been sealed in a cornerstone of an old building in New York had been recently opened. Included among the contents of the box were several newspapers. The newspapers contained stories about the following: bloody uprising in Africa; trouble in Panama and the Far East; Brooklyn police versus the Mafia; commuters complaining of congestion; criticism of Broadway box office practices; editorials on the danger of smoking. The date on the newspapers was January 18, 1904.

Might we then conclude that man never changes, nor the world that he creates? Hardly, if we recall that 20,000 years ago (a mere flick of the eyelid in comparison to man's total history) man was just emerging from the Paleolithic or old Stone Age. Such tools as he possessed he laboriously made by chipping and flaking flint and other stones. He had no permanent place of abode, raised no crops, kept no flocks, had no social group larger than the family or band, had no clothing save the skins of beasts which he killed, had no system of writing, and his religion was little more than an attempt to capture the spirit of the wild animals which he hunted and needed for survival. His only history was that which he could remember and his only future was a precarious day-to-day existence. Fifteen thousand years later, in the Bronze Age, he had built great civilizations, perfected writing, and numbered among his intellectual pursuits mathematics, bookkeeping, astronomy, geography, alchemy, navigation, and engineering. His artistic creations have perhaps not been excelled even unto today. He possessed considerable skill in metallurgy, medicine, and architecture. He had a system of laws, a political institution, a highly complex religion and had even erected a system of stratification. He was engaged in mass production, had a flourishing oil industry, and settled his disputes in a court of law. And for those people who think that large-scale

organizations and bureaucracies are a recent product, let me refer you to the book of Exodus, Chapter 18, where Jethro, the father-in-law of Moses (who was perhaps one of the first successful management consultants), advised Moses to organize the Israelites along bureaucratic lines. The account runs as follows:

> And Moses' father-in-law said unto him, The thing that thou doest is not good. Thou wilt surely wear away, both thou, and this people that is with thee: for this thing is too heavy for thee; thou art not able to perform it thyself alone. Hearken now unto my voice, I will give thee counsel, and God shall be with thee: Be thou for the people to God-ward, that thou mayest bring the causes unto God. And thou shalt teach them ordinances and laws, and shalt shew them the way wherein they must walk, and the work that they must do. Moreover thou shalt provide out of all the people able men, such as fear God, men of truth, hating covetousness; and place such over them, to be rulers of thousands, and rulers of hundreds, rulers of fifties, and rulers of tens. And let them judge the people at all seasons; and it shall be, that every great matter they shall bring unto thee, but every small matter they shall judge; so shall it be easier for thyself and they shall bear the burden with thee.

Today still, 5,000 years later, man continues to develop, create, to innovate, to proliferate, and his horizons now reach out to the stars. With such progress, what then is the condition of man today? As the only animal who wages war, he has perhaps reached a state of complete efficiency in that he can resolve disputes in war with absolute finality by the total annihilation of his enemy and himself. As the only tool-making and tool-using animal, he finds himself facing an enigma of his own creation: how must he relate to the tools he has created? Man, for example, has created the computer which, although it has less genuine mental power than a fish, can nevertheless solve incredibly complex problems through the use of simple arithmetic at lightening speed. By adding, subtracting, multiplying and dividing at the approximate rate of some 16,600 calculations per second, the computer can, for example, work out in three hours weather predictions that would take one man and one adding machine three centuries to accomplish. The Bank of America, as another example, utilizes a computer which automatically services daily over 90,000 mortgage loans, 190,000 installment loans, and also makes statistical reports to the management.

With automatic machine tools or automation, it is now possible for 1,000 radios a day to be assembled by two men, whereas two hundred men had been required before automation. In a Ford Motor Company plant where, prior to automation, 400 men labored for 40 minutes to make an engine block, now, with automation, 48 men can do the same job in one-half the time, and the plant is already being modernized because of obsolescence.

In competition with cybernated system (the combination of computers and automation) man becomes a poor second in terms of precision and rapidity. Man is being displaced by the machines of his creation and he is being made obsolete. As he created his machines, he created an enigma which he has not yet solved and in the interim is increasingly becoming the servant and captive of his machines, rather than their master.

What of man the creator and manipulator of symbols? Man now finds himself in the middle of an information explosion. He is literally drowning in symbols, both visual and auditory. Books are being "consumed" by Americans alone at the rate of close to one billion per year; Americans also absorb more than four billion copies of periodicals. More than 65 million people go to the movies each week. In the U. S. alone there are perhaps upwards of 175 million radios, and eight out of ten American homes possess television sets. On the technical side, there are an estimated 50,000 scientific journals published in the world, some 7,000 in medical and allied fields alone. We live in a world of slogans, jingles, signboards, trademarks, emblems, headlines, printed directions, and the printed and spoken word in thousands upon thousands of varieties and media. Symbols on the conscious level are used to the extent that they no longer possess meaning, and instead we encounter symbols with meaning at the subconscious level. We manipulate and are manipulated to buy, vote, even think. Man seeks silence, he seeks

an escape from the symbols he has created, and which now mold him, and again seeks to unravel the enigma he has created.

What of man the animal that buries his dead? Recent critics suggest that man cannot accomplish this simple act of reverence and respect today with dignity. Man utilizes his dead in a status competition. He commercializes death and degrades the departed. Man creates a debased institution surrounding death and is repelled by his own creation.

Man develops an arbitrary division of labor. He parcels out work among his numbers and becomes specialized. His achievements are in large part the direct result of this specialization. Yet man cannot halt the specialization he has created. He finds himself the victim of this specialization. Man may now spend his years in the questionable endeavor of screwing jar tops on jars which flow down an endless conveyor belt, or attaching hub caps to the left rear wheel of Buick four-door automobiles. We specialize to the point of incapacity. Man becomes competent in a narrow field of specialization only to the detriment of his far wider capabilities.

Man has a past, a present, and a future. He discards his past as rustic, provincial, and undesirable. He is confused by and alientated from his present, and he is frightened of and unwilling to face his future. He is barely aware of, and only in a distorted way, his past, his present or his future. As the only moral animal, man labors mightily to be the most immoral, and then deceives himself by the nature of his immorality. Man manufactures an environment. Man produced industrialization, erosion, urbanization, pollution, congestion, smog, and technological change. He is influenced and molded by this environment. Man suffers technological displacement, alienation from his work, the sadness of the suburbs, the frustration of the freeway, the irritation of the smog, and the loneliness of the city. Man is exposed to the mass media and develops mass taste. He manipulates his environment and is in turn manipulated by it. Man develops a culture. He produces and lives by and with his products. Man produces enigmas which breed more enigmas. Man seeks to understand and cope with the enigmas which hold him captive; for man is truly in captivity — the captivity of the world he has created. Man also seeks to understand the creator of his captivity, himself, for he is the greatest enigma of them all. Man, the enigma, which creates other enigmas, is truly the greatest challenge confronting us today.

There is urgency in seeking the answer to this enigma. The threat of atomic power is with us daily, and the specter of the population boom looms just around the corner, perhaps an even greater threat than the mushroom. One researcher, for example, stated that theoretically, at present growth rates, the world population would, by the middle of the fourth decade of the 21st Century, be sufficiently large that we would all be crushed to death. A more realistic and frightening result of the population increase, starvation and pestilence, awaits us much sooner. There is even greater urgency, however, in learning to relate to the world in which we live and thus must cope with in our everyday life. Man must come to understand himself in order to understand life, in order to save himself from the abyss he has created.

How are we to seek this understanding? We seek the answers in education, in knowledge. Which discipline, which science will show us the answers? In truth, we need all the answers which all the sciences and all the humanities and all the disciplines will provide for us. For each seeks to understand man and his relation to life. But, again to heed Pope, the proper study of mankind is man. Sociology and its sister discipline anthropology seek to study man, for they are in fact the science of man. We seek to study man in his past, in his present, and hopefully to gain some understanding of man's future. To understand man in his totality is difficult, for we are part of mankind. That which we are a part of is often so obvious that we overlook it, and as a result overlook some of the answers we are seeking. We can overcome this to some degree by examining man in other worlds, in other times, and in other situations. Thus we learn about ourselves by looking at man in other forms from a vantage point. There is no man, no matter how isolated and primitive, who does not have answers to provide us to our questions about ourselves.

Every answer is obvious once we know it.

Where do the sociologist and anthropologist pursue this elusive quarry, this enigma called man? We seek man from the deep bowels of the earth to deep space, from isolated valleys deep in Dutch New Guinea to the noisy confusion of a steel fabricating plant. We seek to study man in the simple folk villages of the Cumberland Gap and on the sidewalks of the great urban metropolis. But man the enigma, in all his settings, is the greatest challenge in all the world. The physical anthropologist probes the mysteries of man's distant past in the deep bowels of the earth and the sociologist seeks the answer to man's future among the stars when he studies space ship crew performance in cabin environment research in our nation's great space centers. The anthropologist seeks to understand man in complex society by studying primitive head hunters in Dutch New Guinea and the sociologist seeks to unravel the basic laws of group behavior, social relationships, and human interactions by examining the behavior of assembly line workers in an industrial plant. Each answer often only raises further questions that beg for answers, for man is no simple enigma for which there are simple answers. The solution to man, the enigma, will not come easily, but the eventual and inevitable answer is a challenge most rewarding. To understand the enigmas of his creation he now knows that he must understand himself. Sociology and anthropology will hopefully aid man in this understanding. We must seek the solution to this mystery, and we must track this most elusive quarry. We must study an enigma, the greatest of all enigmas, the biggest enigma in captivity. I feel this is the most exciting and challenging quest left on earth: the study of man, for the proper study of mankind is man.

The Coming of Age of the Behavioral Sciences

By Russell Levanway
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My major goal today will be to speak to you of the excitement of these times, and more especially of the excitement of this period of time in history in my own particular discipline. Since my return to the Millsaps campus, I have heard occasional comments that Millsaps is dead; that students find nothing to excite them; that there are no important issues that stimulate students. This view is just the opposite of what I have observed. The students that I have seen in my classes these past two semesters are the ablest, most interested, and most interesting I have ever worked with. Never has the **Purple and White** been so interesting. Never has it generated greater heat. And, I might add, never has the quality of writing been so good. When we see apathy, it's symptomatic that we are dealing with the trivial, or trite. Jackson, Mississippi, is one of the most stimulating places in the world today. Jim Whitehead commented during his recent visit that the South, and particularly Mississippi, is the major topic of conversation at Iowa. As a matter of fact, he also noted that Southern writers made up one of the two dominant groups in the school for creative writing in which he is enrolled. The problems which we face more acutely than most other sections of the country are a function of the fact that we care, that we feel strongly, that we are living with the vital issues of the day.

It is entirely a motter of emphasis whether we find challenge or threat around us. Take, for instance, the matter of automation. While some people are wringing their hands because of technological change, others are thrilled by the possibility of freedom for creative living. It is my guess that we are entering a period of great creativity in all fields, the sort of thing that is possible only when a civilization has the wealth, leisure, and dynamic environment in which such creative expression is possible. It is a matter of fact that

America is exporting culture for the first time in history. In almost every field, the best books are coming out of America. The present history of psychology is being written almost entirely in the United States.

One of my more pragmatic intentions today is to suggest that one's vocational choice can be a continuing source of satisfaction, and that as a matter of fact the business of everyday living goes along best when one's work is one of the major sources of continuous pleasure to a man or woman. What's more, in actual practice, I'm not at all sure that personal satisfaction is not the best and simplest criterion for the selection of a career. It is only when one is engaged in an activity that is absolutely fascinating and absorbing that one approaches his peak performance. Why do I say this to you? Well, mainly because it is my impression that the present crop of college students is too restricted in making this decision. There seems to be an attitude that if one really wants to do something, there must be something wrong. Unless one's choice fits an established mold, it must be a flippant one. How many of you would really like to follow a course of action different from the one on which you are presently embarked? That isn't right. Do what you most want to do with your life.

What makes for continuing interest in anything? Quite simply, the secret is to continue to find something new in the context of the old. This formula for an interesting life involves, first of all, a very thorough mastery of significant areas of knowledge or experience. It also requires that one continue to expose oneself to new ideas. The major excuse for spending so much time in educating the young is so that with continuing age and experience some of them may really enjoy the education they acquire the rest of their lives. The important thing is to launch yourself into the field of your choice with all the enthusiasm and good humor you can muster.

Now that you're just about resigned that this is going to be another in a long series of parental chats, how about giving me a chance to tell you what I find exciting today about my chosen field of psychology. You might call this talk "What's new in psychology, or at least what does Levanway **think** is new?"

In many ways, psychology has come of age. It is no longer necessary for it to be self-conscious about its status as a science. It is now free to come to grips with its own unique problems. We are no longer justified in looking for answers simply because we can find them; it is essential to look for answers to significant questions. It is not a matter of how we can keep psychology scientific; rather it is an issue of "how can we insure that this science be psychology?" Psychology appears ready for the first time to look at its subject matter. In the past, there was a preference to look to lower animals for clues but only too frequently a failure to follow up these clues in studies of human beings. Simply by counting the proportion of animal and human studies in the journals we can see that this trend has been dramatically reversed. More slowly developed has been the trend to look at individuals first-hand. Instead, we usually find averages of human behavior, with the result that we are dealing with an abstraction, and at times a dangerous abstraction, because the average of human behavior may conceal, rather than reveal, human behavior of individuals. Until we are willing to take the time to observe intently individual human subjects in complex, real situations, and over an extended period of time, we shall find out little about human personality.

We are just beginning to give full recognition to the complexities of human behavior. Maybe this is because we dare do this for the first time. After first reiterating the absolute necessity of collecting the right kind of data with exceeding care (on many variables simultaneously in a complex naturalistic setting, but with appropriate experimental controls, and at the same time sampling adequately various degrees of each variable), I'm going to say that the scientific breakthrough that makes this approach feasible is modern-day computer technology. Having said that the only way we can ever see the complex relationships that interact in extremely subtle ways is by painstakingly collecting appropriate data, let me then insist that the only way the human intellect can fathom these relationships is through the aid of man-made electronic computers. Man can neither remember nor recall in appropriate sequence and relationships the complex interaction we have been describing; relatively simple, robot-like machines can be programmed to do

so. At one time the question was: Can a machine ever be built to think? The more meaningful question today is: Can **we** define **thinking** precisely enough to program a machine to think? The limiting variable is not in the machine but in man's conceptualization ability at this stage in the development of the human animal. Lest we mislead you entirely, we are not suggesting that a machine may think like a human being, only that it may accomplish what a human being accomplishes. The process may be quite different. At the same time, to confound the issue further, the question has been raised: What would a machine be like that was modeled as a man? The forthcoming answer might be that, if it is so modeled, it might be a man. Jerry Blum at Michigan has succeeded in programming men to perform like machines. A recent graduate of my department has pioneered research in medical diagnosis through computers. Dr. McGuire, at the University of Mississippi Medical School, is using his 1620 to interpret psychological profiles, a trend being explored in diagnostic centers all around the country.

It is my firm belief and hope that the complicated business of publishing research will soon be reduced to reporting the essence of a study in computer symbolism, permitting the machine to sift out that which is consistent with other data, that which can clearly be ruled out on the basis of the bulk of evidence to the contrary, and that which must be placed in a tentative classification to await the assimilation of additional data. Instead of going to a library to pore over tediously written reports, we'll ask the computer to summarize what has been done, how well it was done, and to suggest the obvious next steps to be taken in terms of testable hypotheses. Far from implying that this will reduce the role of a scientist to a clerk or technician, this means that the scientist can accomplish an infinitely greater amount of work (creative work) in a given period of time through his two-way conversation with his machine ally. Like the microscope, which is a visual amplifier, a modern-day computer is an intelligence amplifier. Eugenics for human beings is out of the question. Computers are built that can, and do, suggest improvements in their own design.

But to return to the main point, if we want to study phenomena which are complex, we must be prepared to deal with complexity. So long as we content ourselves to deal with the most abstract of generalizations, we can keep our laws simple. We can say, for instance, that all behavior is caused, that it is lawful, but when we start spelling out how the principle of lawfulness applies, we invoke quite different combinations of laws from case to case. A former student of mine recently was involved in a project involving the analysis of the interaction of 300 simultaneous variables. You see, the problem is complicated by the fact that on the psychological level we must consider the interactive effects of biological, physical, and social variables, while on a still more general level we must integrate personality, social, and cultural variables, including significant educational, economic, political, linguistic, philosophical, and religious considerations.

Anthropologists and biologists assure us that the actual structure of a species becomes modified by its activities. At the same time, an improverished environment has been demonstrated not only to bring about gross psychological disturbance but even gross anatomical and biochemical effects in brains of lower animals. Clearly, psychological events take place neither in the head nor in the muscles and joints but rather in the interaction of a biological organism in a physical and social environment. The nature-nurture issue is dead. The question today is "How do inherited predispositions interact with environmental influences in this particular situation?" To put it another way, if the question is "What characteristics do we inherit?" we must answer, "All," in the sense that the inherited component in human behavior is always greater than zero, **and** the same thing can be said for the role of environment.

Another development which is receiving considerable attention from many simultaneous directions is the freedom to ask "why" questions. It is no longer taboo to ask about the nature of life, where we came from, etc. This development is resulting in a whole new look in human motivation. The central question in motivation has long been: "How can we derive all of the social motives to which man is heir by a small list of primary biological drives, such as hunger, thirst, sex?" The rule of the game has been that we must be able to trace step by step how the most complex behavior

can be related basically to the reduction of biological tensions. Anything that smacked of native tendencies outside of the approved list met with professional disapproval. Today we have prominent, well-entrenched professionals arguing most persuasively, **because of research findings,** for such native predispositions as exploratory drive, play drives, and sensory hunger — that is, the postulation of a demand for stimulation as a fundamental property of organisms. Harry Harlow's monkeys will rush for comfort to a terry cloth mother in preference to a wire mother-substitute in spite of the fact that the wire mother has actually nourished them. Woodworth has been saying for about fifty years that "all behavior is directed toward dealing with the environment." Present-day research is making him a prophet. Piaget and others have argued that behavior may be motivated by the effect it has on the environment. Several workers argue that instead of striving to reduce drive (as both the Freudian and behavioristic schools have insisted) each individual possesses his optimal level of activation. Rather than being complacent when all of our biological needs are satisfied, we become bored. We are not suggesting that the reduction of endogenous drives does not account for much human behavior, but, as one writer has put it, we have exogenous motives as well, and these motives might be broken down into three dimensions: (1) the perceptual, the function of which is to learn the environment; (2) the affective, whose function is to improve the environment; and (3) the quantitative, the purpose of which is to maintain an optimal level of excitation. At one end of this quantitative continuum is emotional shock and at the other, boredom. The organism's reaction to its environment is created by the discrepancy between what is expected and what is observed.

Are we opening a Pandora's box of new drives with which we can do nothing? On the contrary, we are merely urging that we continue research along lines already pioneered by some of the most reputable researchers in the most hallowed laboratories. Lest you be misled, however, let me warn you that in many new areas of research it is not so much a question of finding paths as of making them. Of course, we are limited by how far we have gone but we progress only by pushing on as hard as we can in the present. If human civilization continues a few million more years, think how piddling our present efforts will seem.

Much of the early history of psychology centered around the study of physiological processes, especially the senses. Interest in this area is being renewed with a rush. Because of the marvels of electronics, especially our success in miniaturization, we are no longer forced to guess. For example, researchers have succeeded in implanting a minature television transmitter in a live human ear to observe what actually happens when a sound is heard. Control centers for many physiological and psychological functions have been securely isolated. Even the apparent centers of reinforcement and aversion have been found in both human beings and lower animals. Self-stimulation of these centers has been found to be much more effective in motivating behavior than any of the traditional sources of motivation. While at Michigan two summers ago I had occasion to view this phenomenon in Dr. Old's lab. I observed a white rat that had achieved a primitive ability to count under the incentive of being able to plug himself into a source of electrical stimulation through contact with electrodes implanted in the reinforcement center of his brain. Even more amazing there was the research of McConnell with planaria. Dr. McConnell first conditioned an earthworm to make a sudden flexion movement to a light by pairing the light with a mild shock. Subsequently he ground these conditioned worms into hamburger and fed them to their cannibalistic peers. These well-fed worms in turn exhibited the same flexion response. What's more, McConnell was able to identify the chemical substance responsible for the transfer. It is not remote to suggest that children might receive sugared vaccine, not only to prevent polio, but also to develop a reflex to avoid potentially dangerous objects, such as hot stoves. Perhaps most interesting of all is the dovetailing of psychological and physiological facts.

The use of drugs has done more to enable people to get along without institutionalization than any single development. However, it is no longer a question of whether psychotherapy or drug therapy is more effective, but what is the optimal combination of drugs and talking therapy.

Psychology will always be scientific; that is, it will deal

with the world of physical facts. So long as man is made of the same stuff as nature is, the only way he can interact with the world is in terms of what he is and what nature is — that is, in the physical world. We no longer ask whether we behave in terms of unconscious forces. Rather, we ask how we can observe unconscious forces better, that is, make them more conscious and enlist them in the service of everyday activities. As Charlotte Buhler has said, "What has held back the social sciences is not the inadequate lawfulness of social behavior, but the failure to put to nature concise, quantitative questions." We might add that nature has been very obstinate about fitting into the mold that some scientists have tried to impose on it. What we are insisting is that such spooky phenomena as hypnosis and extrasensory perception should no longer be verboten as research problems. It is not a question of how can we ignore these phenomena, if indeed they do exist, but how can we study them more systematically and how can we apply this knowledge most effectively.

Although psychology has accepted itself as a science, let's hope it will never become complacent and stop being rigorous. It can, and will, become both more humanistic and scientific but, in each case, in its own distinctive fashion. We have long ago given up arguing whether psychology uses metaphysical assumptions. The more meaningful and useful question is "What are these assumptions?"

Once I was foolhardy enough to ask one of my professors about the validity of the Rorschach ink blot test. For the price of this one little question I received a personality diagnosis right on the spot. I found out that I was neurotic to ask this sort of existence question. I didn't dare reply at the time that it appeared to me to border on the psychotic not to ask the question once in a while. Today we are not only asking about the limits of the usefulness of this instrument but are questioning its general usefulness in areas where it was once being used as a criterion. Certainly it is a sign of maturity when you stop defending and start asking basic questions of your own discipline.

In the area of definition of terms, we are embracing newer philosophical trends, getting away from the stultifying effects of a strict operationism. At the same time, however, we find a reaction setting in to the structuring of elegant theories, based on a little research, a smattering of guesswork, and plastered together with a generous amount of fudge. In a very real sense, we are backing up to a more descriptive approach (where we should have been all along), and the question of rigorous definition has given way to a question of adequate communication of just what was done and what happened. It is not how we can defend our pet theory in the light of new findings, but rather one of how does this fact fit in best with other facts. Moreover, we recognize facts merely as agreements among competent judges, to be supplanted by more adequate formulations as additional data are gathered.

Growing out of this disenchantment with theory is the overriding question "Where do we go from here?" There is the feeling of being poised on the threshold of a new direction. This sense of anticipation makes for a highly exhilarating state of affairs. Whatever direction psychology takes, I believe, as one of my colleagues expressed it, that the period of time on which we are immediately embarking will come to be known as the Age of the Behavioral Sciences.